FUTURE ARCHITECTURE

A JOURNEY INTO THE ARCHITECTURAL FUTURE OF THE WORLD

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FUTURE CONSTRUCTION

Architects have challenged mankind to look beyond the boundaries of preconceived ideas since standing stones were first erected in Neolithic times. The Egyptian and South American pyramids, the Eiffel Tower and the Empire State Building once challenged the imagination, and they stand today as iconic tributes to daring visionaries. Today, we continue to imagine our future skyline, and we are rewarded with a continuing evolution of breathtaking structures, stunning innovations and some of the most beautiful pictures created.

The harmony of design, environment and visionary urban planning continue to dominate architecture today, and we journey into the minds of today's architects as they dream of a future landscape without equal. Visit the Invisible House of tomorrow - where the boundaries between structure and its setting become blurred and appear almost invisible as they reflect the surrounding environment . Wander through spectacular, indoor parks that blend natural and unnatural objects in a stunning landscape of forests, wetlands, tundra - all in specially designed micro-climates that mimic the natural environment.

Traverse bridges of such clever and intricate design that they straddle waterways like sculptured galleries, or tower in sci-fi splendor in a series of gravity-defying tiers. If natural disaster survival tempts you, explore the world of tomorrow's bunkers or hybrid beach structures. Alternatively, go offshore to combat rising sea levels, and witness future aquatecture in the form of floating hotels or massive, arched survivalist structures with their own ecosystems. And what of the future of global power generation - will countless millions of existing power generation plants stand idle and empty as the earth goes green? Not according to one group of architects, who are currently working on plans to transform those buildings by clothing them with oxygen-producing plants that will absorb CO2 emissions.

As mining takes a popularity hit on behalf of the environment and its sustainability, a return to using wood has been mooted by some of our future designers, and we take you inside high-rise wooden structures that almost defy the laws of physics in their construction. Whilst in the realm of environmental management, visit the proposed 'sponge parks' of the future, where beautifully landscaped areas mask the treatment of wastewater and polluted rivers and become havens of retreat for thousands. Marvel at the plan to grow building materials using biotechnology, instead of mining for the components that make concrete and bricks, and learn why cornstalks and root plants might become the building blocks of tomorrow.

And what of the skyline? See what architects have already designed for the future skyline of our least attractive cities - buildings created to mimic the view of mountains and hills, rather than overshadow their inhabitants with high-rise sameness.

With Future Architecture, set your mind free as you explore the stunning world of our most innovative and creative architectural minds - witness the future and the beauty of tomorrow's great structures today.

EXPO 2015

The Expo 2015 Gate in Piazza Castello, Milan, Italy with the Sforza Castle in background on April 14, 2015. Expo 2015 is the next Universal Exposition.

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AMPHIBIOUS 1000

LUXURY SEMISUBMERGED HOTEL RESORT WITH FLOATING SUITES QATAR, ARABIA SAUDITA, 2022

This innovative project, designed for an Arabian commission by Giancarlo Zema Design Group, is the first semi-submerged hotel resort called Amphibious, like a big aquatic animal stretching out from the land into the sea and extends horizontally for 1km thanks to two long wide arms. The project is composed of a land section and sea section. On the land area are residential buildings, office buildings and a marina with a modern and flexible harbour. All the structures are situated in a semi-circle around the tower with the panoramic restaurant.

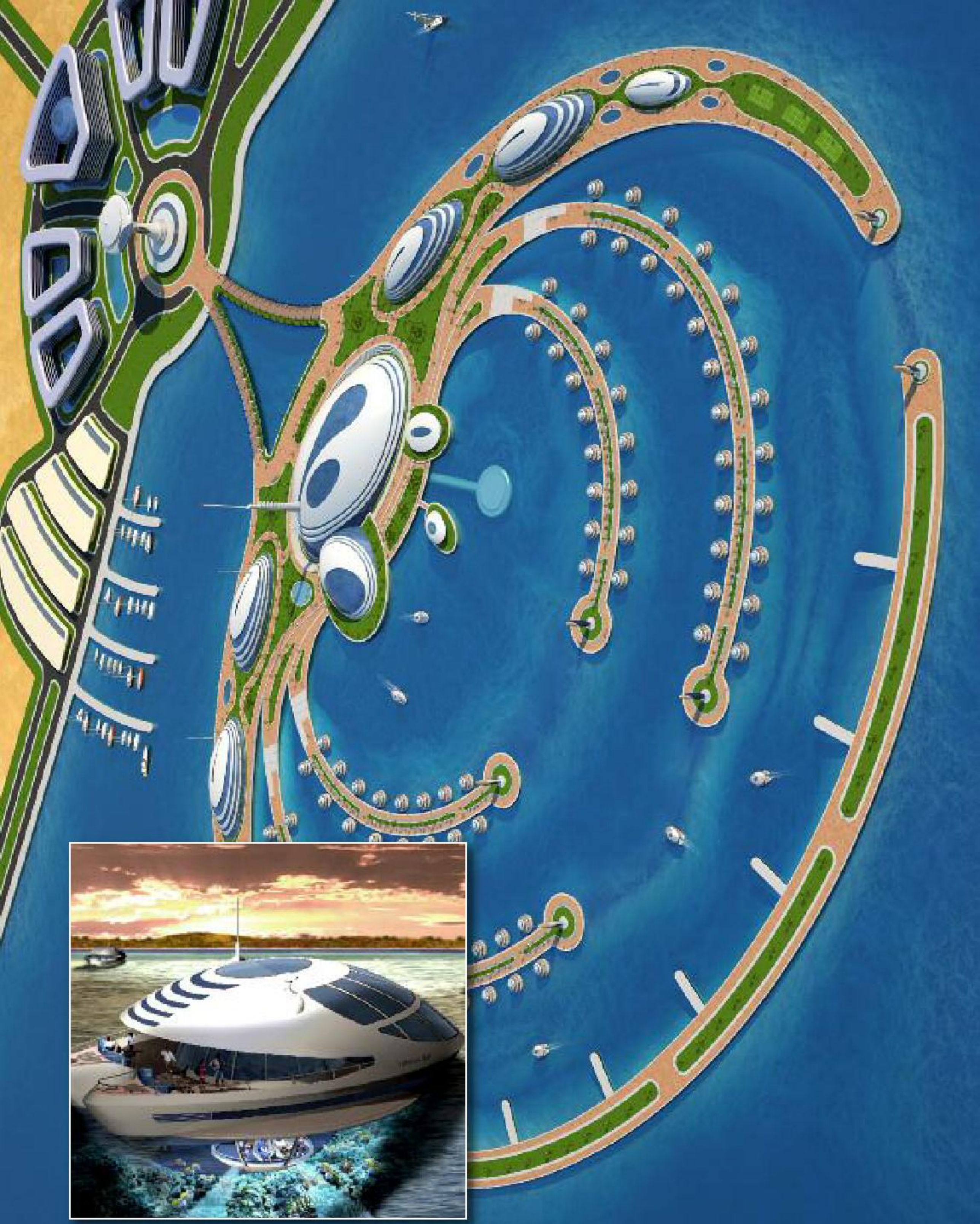
In the sea section there are four innovative semi-submerged hotels with underwater halls that provide fascinating views. The four hotels remind us of the soft lines of the superyachts anchored on land. Large diagonal glass windows make the hotels unique, each with 75 luxury suites

arranged around the perimeter of the building so each has a big terrace that overlooks the complex. The activities of the hotel take place in the underwater area that is surrounded by aquariums.

The hotels are situated around a central public welcome area that has an interactive museum.

The smaller floating platforms will have 80 floating suites called Jelly-fish with underwater views within the artificial reef. At the end of each platform are lighthouses. It is possible to move everywhere thanks to electrical vehicles that respect the eco-system philosophy.

Water transport is provided by 20 metre aluminim yachts called Trilobis that are equipped with hydrogen engines and an underwater observatory globe. The bridge that connects the land and sea section is filled with plants that give the idea of projecting the land flora into the sea. The main structure is in steel complete with all the necessary lighting systems.



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WEDEL KRAFTWERK

An Experiment in Ecological Aesthetics

The objective for Wedel Kraftwerk is an attempt to resolve the conflict between the natural ecology and the manmade environment. The harnessing and deployment of energy and its intersection with the natural ecologies is perhaps the central question of the civilization we inhabit. It is therefore crucial for Vattenfall, a corporation that is vested in the generation and distribution of energy to address this question, not only as a technical problem, but also as an aesthetic and cultural subject. We need to develop technologies that will make the artificial part of the natural ecosystems. This project is aimed at providing Vattenfall with an aesthetic manifestation of a new integration between manmade processes and the natural environment. It would be a mistake for the facilities to appear as industrial facilities, emphasising their artificiality through the use of steel and concrete and sharp geometries. On the contrary, our proposal gravitates around the possibility to make the artificial as close as possible to the natural, by designing an envelope for the Wedel Vattenfall plant which will appear as continuous with nature, while being economic and efficient. In short, we have tried to produce a camouflage strategy for the new plants, which we hope to convert into a giant topiary game, of a scale never seen before, a green mountain surrounded by dense vegetation.

The proposal was generated from an array of specific considerations, including Vattenfall's profile as a leading energy company, its specific location in Wedel, and its relationship with the landscaping and public operations being developed along the banks of the Elbe.

Wedel Kraftwerk occupies a significant site. Its location on the banks of the Elba, its climate and the activities which take place there… this intervention will be crucial to the town of Wedel and to the region of Hamburg, creating an important landmark for Wedel.

A crucial consideration for the project has been its ecological performance. The project will contribute in terms of architecture, urbanity and landscape to the consolidation of this site as a place for high environmental performance and quality. And also this intervention should bring back something to the citizenry in terms of environmental quality, architecture, landscape, and public space.

An Experiment in Ecological Aesthetics

Other considerations have been of economic and technical nature. Within these considerations, the economic viability (by applying adequate resources both in capital investment and in maintenance), energy conservation and sustainability have played a decisive role in the design of the proposal.

Green Cloud

The first concept departed from the idea that we could produce a corrugated envelope to the new plant, made from creepers which could absorb a substantial part of the carbon emissions of the plant because of an increased surface area, produced by a corrugation of the green envelope. The green envelope will become a green mountain, a giant topiary, using the geometry of the future complex as a departure point and using corrugation as a structural device to stabilise the new envelope. Given that this green envelope will require some research in terms of its maintenance costs, the current proposal retains the aesthetic qualities of this concept and replaces the vegetation of the façade by a green textile structure.

The proposal allows for Vattenfall to develop research on the possibility of making the membrane literally out of vegetation. The geometry of the envelope has been designed to allow for the progressive replacement of the green textile by vegetation in the future, once the investigation has taken place. The geometry of the envelope has been designed to be easily replaced by a wiremesh for the creepers to climb on.

Landscape: An Artificial Ecosystem

The proposal for the landscape is to maximise the presence of nature as the new image of the plant. The aim is to bring back the original ecosystem that once populated the margins of the Elbe: the riparian forest. This type of vegetation is also one of the most avid consumers of CO2 and there are real advantages to the use of this ecosystem as the image of the new Wedel plant.

The environment of the Kraftwerk must be integrated into the "nautical mile" of the Elba, and therefore with its gardens, viewpoints, bike routes... Our aim is for the Kraftwerk to become not only integrated in this emerging public real, but to become one of its main features. Serious consideration has been given to the preservation of the historical remnants of the old plant, where the historical and emotional memory of the community is vested. Respect for this historical memory, while maximizing economic viability integrates as many elements as possible from the existing plant. One of the proposals is to preserve the two existing chimneys, thereby retaining a familiar trait of the local landscape, while saving the cost of demolition.

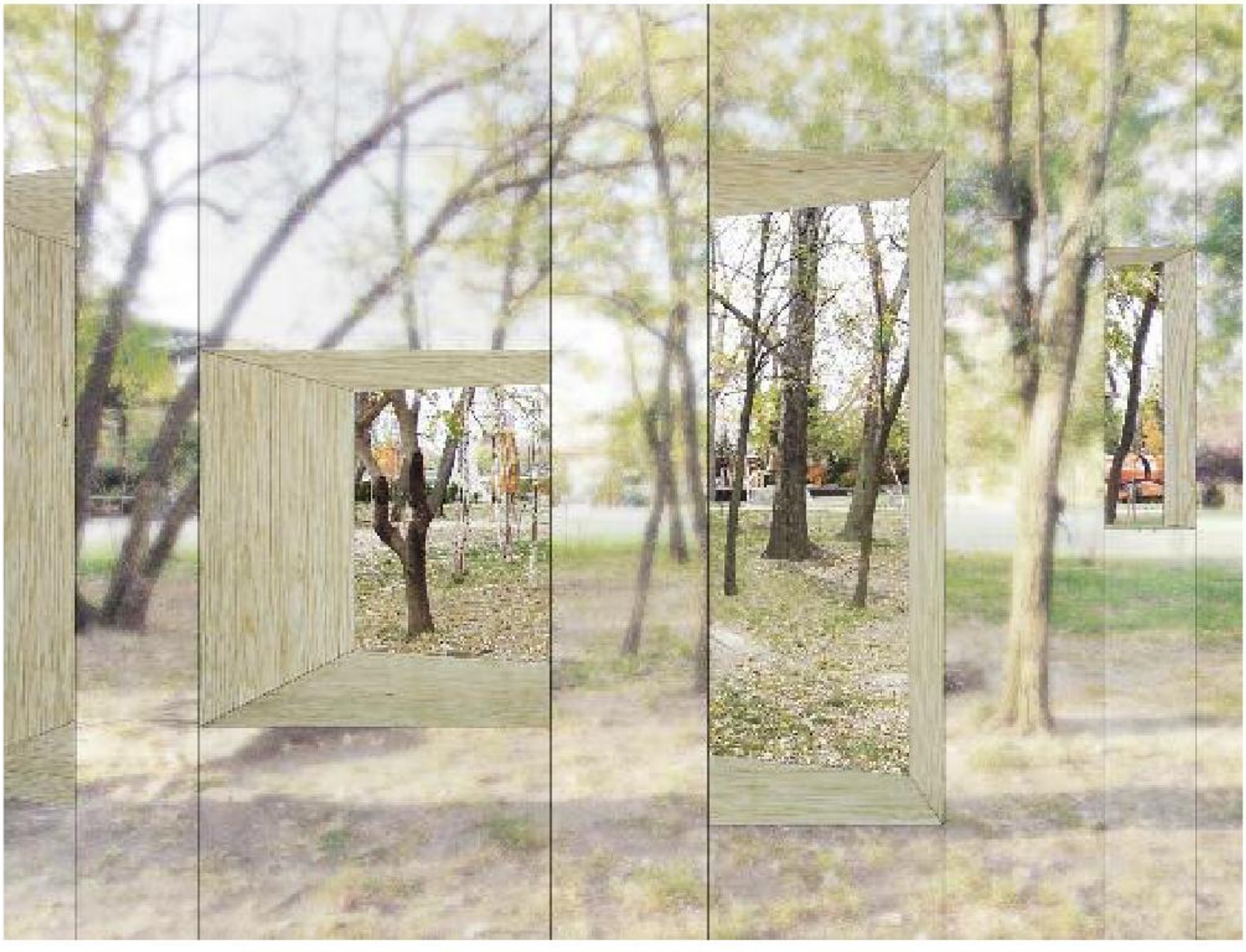
The proposal is to create a densely packed riparian forest with the local vegetation of the banks of the Elbe around the Powerstation, both as a carbon sequestration device and as an aesthetic device, making the powerstation into a large green cloud which will become a new landmark in the Wedel skyline. This riparian forest will follow the spirit and extraordinary environmental quality of the Stadtpark in Hamburg, which is configured as the city's Central Park.

This strategy will be followed around the station, and will act as a backdrop to the public spaces being developed along the banks of the Elbe.

In controlled and restricted areas of massive tree clusters, we have considered the implementation of a system for the growth acceleration by using controlled emission of CO2 from the power station, conveniently filtered and cleaned.

DUBAI MARINA

Dubai Marina is an artificial canal city, built along a two mile (3 km) stretch of the Persian Gulf shoreline. When the entire development is complete, it will accommodate more than 120,000 people in residential towers and villas. It is located on Interchange 5 between Jebel Ali Port and the area which hosts Dubai Internet City, Dubai Media City, and the American University in Dubai. The first phase of this project has been completed.



INVISIBLE BARN

A VISION SENSITIVE PAVILION

Invisible Barn is a site-specific design proposal that re-contextualizes the landscape of the Socrates Sculpture Park in Truckee California by projecting the landscape on the structural proposition. The barn shaped-wooden structure designed by Stpmj of NY is sheeted with reflective film on its surfaces. This mirror-finished folly is placed in the middle of the grove and reflects its surrounding environment: different species of trees and plants, sky, ground and the seasonal changes of the site. The reflection of the folly within its enclosed grove allows the structure to smoothly assimilate into the nature. The incisions that penetrate through the folly allow visitors to maneuver in, out, and around the structure. Invisible Barn is a folly that loses its man-made architectural presence in nature but adds novel experience and interaction to the users.

Invisible Barn is placed in the core of the grove which lies on the passageway of the Socrates Sculpture Park from the South Entrance. Around the circumference of the grove there are a dozen of birch trees in similar size and equal spacing from one another. Due to the similarity of its size and placement of the trees, the projection on the mirrored surface is similar to what people would see without the folly. The visual illusion that blurs the perceptual boundary between the folly and the site, allows the folly to disappear and be invisible in nature, reconstructing the landscape of the site. The barn is shaped as a skinny and long parallelogram to elude the dense trees. The beveled folly has openings with various

sizes and depths that connote windows and doors. These are solid and void on the folly's envelope, reflective film and plywood-framed openings, accentuate the openings. This creates a visual trick that the framed openings are floating on air in the grove. Through these apertures visitors perceive the subtle differences between the real and the mirrored landscape, understanding the depth of the grove and other art installations over the site. The apertures may suggest viewing frames, passages, and benches and visitors are intended to interact physically and visually with them. In addition the reflective sheathing is aluminized polyester film which has more than 90% of UV reflectivity in the range of 200-400nm wavelength. Though humans do not recognize this UV reflection, it is perceivable to birds so that prevents them from colliding onto the structure.

The structure is comprised of 2x4 wood studs and sheathing where the mylar mirror film is surfaced. Wood framed piece is connected to a pressure treated wood pier on concrete footing buried underground. A hybrid construction method with on and off-site is suggested. Prefabricated walls, floors and plywood opening frames can be moved by two or three people onto the site where the components are assembled.

At the intersections between sculpture and architecture, Invisible Barn loses its architectural shape in nature but encourages visitors to interact with it through overlapping in materials and building techniques between the two disciplines. As a static structure, the folly uses its materiality and the site context to draw a new scene derived from the existing landscape. As people begin to move away, toward and within the folly, the users will slowly recognize a space within the grove that reflects, mirrors, and animates the landscape of the park.

CHAOYANG PARK PLAZA

As a recent realization of the concept “Shanshui City,”“Chaoyang Park Plaza” has begun construction in Beijing. It marks another milestone in one of the practices of MAD's design theory. This project pushes the boundary of the urbanization process in modern cosmopolitan life by creating a dialogue between artificial scenery and natural landscapes.

Chaoyang Park Plaza is located in the central business district (CBD) of Beijing, and is composed of over 120,000 square meters of commercial, office, and residential buildings. The site is on the Southern edge of Chaoyang Park, one of the largest public parks in Beijing. Its proximity to the park will not only create breathtaking views of the city, but will also highly impact the skyline of Beijing.

By transforming features of Chinese classical landscape painting, such as lakes, springs, forests, creeks, valleys, and stones, into modern “city landscapes”, the urban space creates a balance between high urban density and natural landscape. The forms of the buildings echo what is found in natural landscapes, and re-introduces nature to the urban realm.

Like the tall mountain cliffs and river landscapes of China, a pair of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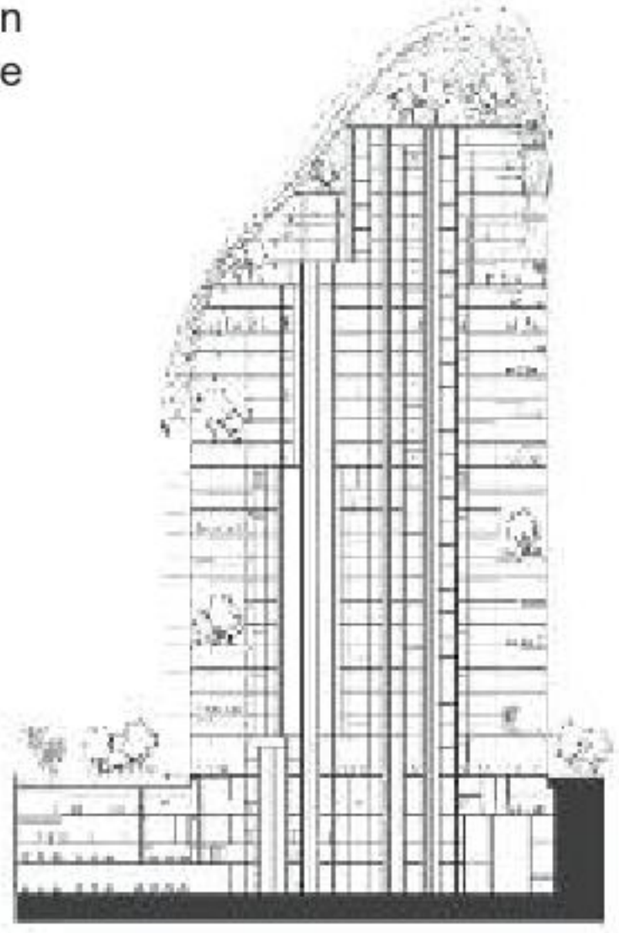
asymmetrical towers creates a dramatic skyline in front of the park. Ridges and valleys define the shape of the exterior glass facade, as if the natural forces of erosion wore down the tower into a few thin lines. Flowing down the facade, the lines emphasize the smoothness of the towers and its verticality. The internal ventilation and filtration system of the ridges draw a natural breeze indoors, which not only improves the interior space but also creates an energy efficient system.

Landscape elements are injected into the interiors of the towers to augment the feeling of nature within an urban framework. The two towers are connected by a tall courtyard lobby with a ceiling height of up to 17 meters. The site and sounds of flowing water make the entire lobby feel like a natural scene from a mountain valley. At the top of the towers, multi-level terraces shaped by the curving forms of the towers are public gardens where people can gaze out over the entire city and look down at the valley scene created by the lower buildings on the site.

Located to the South of the towers, four office buildings are shaped like river stones that have been eroded over a long period. Smooth, round, and each with its own features, they are delicately arranged to allow each other space while also forming an organic whole. Adjacent to the office buildings are two multi-level residential buildings in the Southwest area of the compound. These buildings continue the ‘mid-air courtyard’concept, and provide all who live here with the freedom of wandering through a mountain forest.

The project was awarded the “Leadership in Energy and Environmental Design (LEED)”Gold certificate by U.S. Green Building Council. Its use of natural lighting, intelligent building, and air purification system make this project stand out from others being built today. The ideal of “nature”is not only embodied in the innovation of green technology, but also in the planning concept. This project transforms the traditional model of buildings in a modern city’s central business district. By exploring the symbiotic relationship between modern urban architecture and natural environment, it revives the harmonious co-existence between urban life and nature. It creates a Shanshui city where people can share their individual emotions and a sense of belonging.



DDP

The Dongdaemun Design Plaza, also called the DDP, is a major urban development landmark in Seoul, South Korea designed by Zaha Hadid and Samoo, with a distinctively neofuturistic design characterized by the "powerful, curving forms of elongated structures". The landmark is the centerpiece of South Korea's fashion hub and popular tourist destination, Dongdaemun, featuring a walkable park on its roofs, large global exhibition spaces, futuristic retail stores and restored parts of the Seoul fortress.

The DDP has been one of the main reasons for Seoul's designation as World Design Capital in 2010. Construction started in 2009 and it was officially inaugurated on March 21, 2014. It is physically connected to Seoul Subway via Dongdaemun History & Culture Park Station on Line 2, 4 and 5.

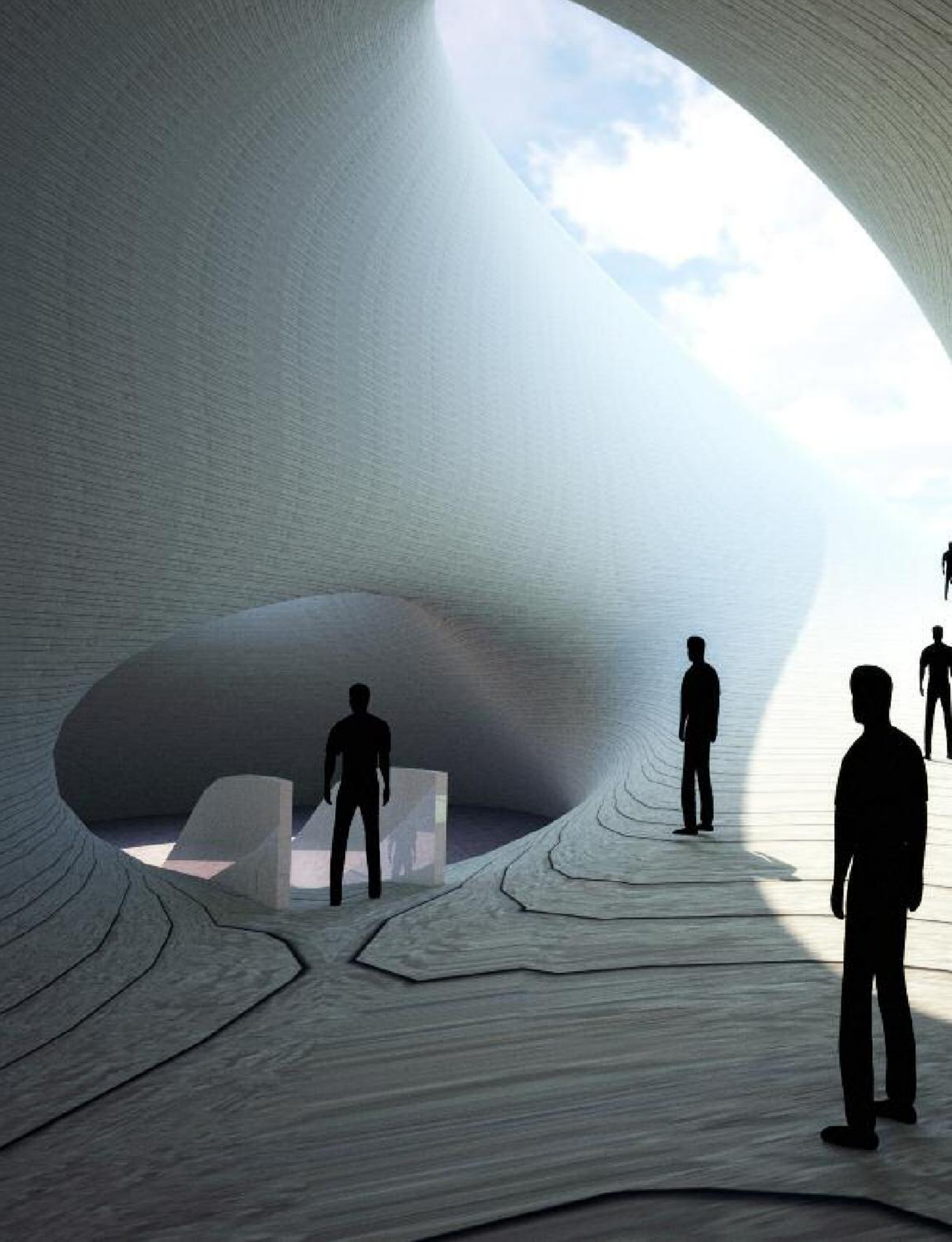
PINGTAN ART MUSEUM

Pingtan Art Museum, the third museum design by MAD Architects, has just begun its construction preparation phase. It will be the largest private museum in Asia, claiming a construction area of over 40,000 square meters. The museum's investments total around 800 million RMB and upon completion, its debut exhibition will display over a thousand pieces of national treasures.

Being the largest island in the Fujian province, Pingtan is also the Chinese island nearest to Taiwan. In 2010, the 'Comprehensive Experimental Zone' project in Pingtan was officially launched; the island is expected to become the primary location for trade and cultural communication between Taiwan and the mainland in the foreseeable future. The island, which is currently home to fisheries and a military base, will quickly be transformed into an large-scale urban development zone.

This new city, which is still under planning, will hold the museum at its center. The museum itself acts as a smaller scale island off the Pingtan Island itself, connected to land only by a slightly undulating pier, which, in turn, bridges artificial and natural, city and culture, as well as history and future. The museum represents a long-lasting earthscape in water and is a symbol of the island in ancient times, with each island containing a mountain beneath it.

The island is firstly a public space that is then turned into a museum. The sea, the beach, the oasis and the slope all interconnect with each other, forming a harmonious capacious space with the mountains in the distance. The building



is constructed with concrete that is blended with local sand shells. The indoor space, formed by the rise and fall of the formal movements, looks similar to ancient caves.

Pingtan Art Museum is built in a landscape setting of an urban city. After its completion, it will create a new space for the city and the city's inhabitants and further inspire them to reflect on the impact made by time and nature.

EARTH-WATER RELATIONSHIP

Condominium design in the Netherlands almost always involves clever design around or in water. This clever blend of materials in this apartment complex hints at the country's architectural heritage of windmills and wood, reaching to the extent of the land in a reflection of the Netherland's centuries-old earth-water relationship.

CHARACTER & CULTURE

Part of the Athens Olympic Complex for the 2004 games, this steel construction is just one of a complex of interconnecting structures designed to combine the strength of steel and the versatility of polycarbonate. Character and culture were the keywords for the project, with ancient Greek architecture as the basis upon which the project was to stand. With the Aegean Sea and its islands as a backdrop, Spanish architect, Santiago Calatrava, cleverly combined innovative modern design with the city's rich culture, creating arcs, bows, tensors and bridges to form an organic skeleton of harmony between interconnected structures.

Winemaking Heritage

Modern architectural design practises blend with the heritage of winemaking in Santiago Calatrava's stunning creation - a winery in total harmony with its landscape of vineyards, framed in the backdrop of Spain's Sierra de Cantabria mountains. Copperised, cedarwood cladding provides warmth and rich colour to the concrete structure, and aluminim-clad timber roof beams create a contrast that is second to none. With a silhouette reminiscent of wine casks and an two opposing but complementary roof-lines, Calatrava's design stands as a symbol of the relationship between intelligent design and a building's raison d'etre.

DISASTER PROOF

DIONISIO GONZÁLEZ

Dauphin Island is located on a sand bar. The Gulf of Mexico lies to the south of the island, and the Mississippi Sound and the bay of Mobile lie to the north. The island currently has a fixed population of 1200 inhabitants and is connected to Mobile by the hyperboloid Gordon Persons bridge – in an almost dreamed-of suspension. Even though it has several bird reserves, the main one is the Audubon Bird Sanctuary; it is the primary meeting place for the birds that emigrate to the north from South America and, as a consequence, many species can be found before they continue their journeys.

Mapped out by the Spanish explorers in 1513, the first French settlers called the island Massacre for the "mountain of human skeletons" they found. The island's importance as a refuge and defence port was acknowledged, and soon "Isle Dauphine", as it was subsequently called by a great-great-grandson of Louis XIV and heir of Dauphin, became a bridge for the colonisation of the New World. Spanish and English created fortresses that protected the entrances to the bay, but it was the Americans who captured Mobile along with Dauphin Island in 1813 and turned it into a permanent fortification.

My interest in Dauphin Island comes from the study of aquatic architecture and pile dwellings originating in the Neolithic period. Before becoming interested in this location I planned to visit the Kampong Ayer district of Bandar Seri Begawan, the capital of Brunei. But the fact is that the architecture of Dauphin Island contains both a kind of humility, of servitude and of submission to a medium that make it typologically ambiguous. On the one hand the oscillations of the water and the relations with an unconsolidated or exposed environment mark the position and height of its buildings, and on

the other hand the superfluity or the redundancy of many of its constructions make them magnetic, almost totemic, in an enclave contrarily envisaged for fishing and leisure.

There is a certain phantasmagoria in the non-holiday periods that make this enclave a hypnotic region, not only for the implicit solitude but also because the joining, the consolidation of the dwellings and their subsequent rejuvenation (the summit of elegant subtleties, vertexes and crests) are exposed to a near-certain capitulation. They are constructive structures for resignation.

From the island's original name of Massacre, to so many named fatalities: Katrina, Ivan….up to the current oil-spill catastrophe and the over 1.9 million gallons of chemical dispersants poured in to date to dissolve the crude oil that began spreading on 20th April, in what is seen as the worst spill in history, this island has a natural complicity with adversity.

How can this island settle or face this conjunction of disaster and its subordination to the subsoil with the property policy of its meagre surface? The inhabitants of Dauphin Island have a motto: rise up in the face of adversity, but, doesn't this proclamation contain a neurotic obstinacy in what is a supra-heroic, but useless existence? Their denial of docility generates a permanent constructive worship, an establishment of the bricoleur as the counter figure to the concept of dedition; of conversion into a deditian territory.

At the moment its inhabitants distance themselves from objective temporary logic, the architectural practice is developed from a permanent chaining of the hours but in a time that is at once measurable. The now old woman who owns a house with dilapidated pillars and a large part of the boarding of the walls detached or raised up proudly stated that the house had been erected by her grandfather, without doubt convinced by the concept of belonging, but now postulated in the budget of non-continuance. Actually, in itself the house was an unruly but ruinous symbol of the confrontation with the forces of nature.

In this form of inhabiting disaster there is a paradox, on the one hand the way the community establishes itself, in a continuous constructive activity, fixes the group in a society of the present and, on the other hand, that fragmentary state permanently reconciles it to a vision of the deconstructed whole around a historical continuity. Which means they live in real time and yet in delayed time. That obstinacy to consecrate existence to an occupation of the terrain exposed to folly, demolition or devastation places them inside the promethean myth of the boldness to do or possess divine things. Living out, therefore, the rigour of random phenomena as opposed to the deterministic phenomena in a reality that is modelled around distributions of probability.

Katrina caused the loss of 250 houses on a surface area of 16 square kilometres, and Ivan 170 only in the more open, western area of the island. Now, since an accident that occurred on 20th April on the Deepwater Horizon oil platform caused the spillage of 800,000 litres of crude oil a day, approximately 172 kilometres of barriers have been deployed along the whole of the Gulf coast. The fact is that these barriers are prominent enough to drive away the American middle class who seek exile and relaxation on the island. The reality is, as the locals assert, that without visitors this town is dying.

I left Dauphin Island in the morning; the day was clear, the waters of the gulf were not threatening as they had been on some days during my stay, but calm and schematic, and on leaving I felt that I was depopulating the depopulation even more. I crossed over the road under a clear, accessible sky, amidst the slight tumult of the white dunes and the inhabited or vacant houses against the light. One week later I heard that just the day after my departure Ida, a tropical storm, had passed through, devastating and shrivelling the island.

Shortly afterwards I received this e-mail
Hello – I want to thank you for coming to our island and I'd like to ask a favor of you. As you may be aware, we had Tropical Storm Ida hit the island just this past week. I've attached some pictures of the house that you guys stayed in to let you see the damage. I believe you were here taking pictures of our island, and was wondering if you could share any so that we may show FEMA and others the amount of beach erosion we have suffered again.

Thank you for your consideration!

And subsequently this one

To have an artist's perspective of our island before a storm can sometimes help when dealing with government bureaucracies.

I appreciate your consideration,

FEMA are the initials of the Federal Emergency Management Agency, the US agency for aid in situations of natural disaster or terrorism. The photos they sent me, at my request, of the house I had lived in for three weeks, showed it painfully gaping and dismantled, with clear areas and whole sections crumbling.

Even before putting the images I had captured to use, they were already having repercussions, as documentation, on the region for a new restoration exercise. For a recurrently renovated or entirely recovered architecture. Just in case I was not already perplexed, this was redundant perplexity. Not only had I escaped a hurricane by a few hours; the request for my images made the concept of moribundity as an architectural boost even more specific to me.

This project enters a nominal decamping that is not already visible and shows the tension of an outside with the emergency of a destination; a thought of postponement of utopia. Understanding utopia in the terms in which Marc Augé reflects it as a necessity, not to dream of realising it, but to stretch out towards it and thus obtain the means of reinvention of daily life.

Fourteen blocks of small businesses were demolished to construct the twin towers. Now the architect Richard Gage; the founder of A&E9/11Truth, who has been designing steel structures for buildings for over 20 years, tells us there is an irrefutable body of evidence that suggests that the Twin Towers and building number 7 of the World Trade Center were demolished by controlled demolition. The old town of Beijing is disappearing at the giddy rate of one square kilometre a year, captive to real estate speculation and the work related to the 2008 Olympic Games. This has been denounced by Chinese architects. According to experts, at present the old town of the former imperial capital has around 62.5 square kilometres (the equivalent of a tenth of the city of Madrid) and continues to lose ground to new development projects.

By this I do not mean to point out the notorious relationship between architecture and destruction, but show how often subsequent reconstructions of the areas that have undergone intervention due to speculation, catastrophe and terrorism involve no reintegration whatsoever, but rather replacement; which whilst it may return, does not interpret the surroundings with regard to the pre-existing space.

Contrary to this global flow (peremnal) architectural activity on Dauphin Island is not so much purposeful as substitutive. And in turn it does not seek to avoid its collapse using predetermined customs of containment and paralysis. That is to say, it does not use more decisive anchoring methods, or materials that offer more sail-type resistance to the wind. In principle this may seem to be a mistake, a voluntary outlawing, a banishment, in short, to that natural state of resignation. But the fact is that there is an identitary conformation and a constructive reflection anchored in the south of the country with settlements that are not permanent but are simultaneous, that is, as swift as the immediate occurrence of their demolition or collapse.

My goal, in this series of images, is to carry out project work, a sum of interventions, of alterations to space, based on pre-existing “cartography” but paying attention to the want of proportion bequeathed by the territory itself, and almost to a certain suprarealism, a certain exaggeration and based on respectful usage of said territory. Locating, for this purpose, small buildings or buildings on a scale that is symmetrical to the context, and executing them on those voids on the beach where vestiges indicate a prior presence.

The idea is also to restore and accentuate the phantasmagoria inherent in the area, but using energy-efficient buildings, with recycled materials or materials with low energy expenditure, buildings which are in turn a nature observatory.

Dionisio González

DAIMARU SHANGHAI

New World Daimaru is the latest retail addition to Nanjing Dong Lu, on the corner of Henan Nan Lu. The vast site has been hidden behind scaffolding for a good part of the past year, but it's now emerged - albeit for a soft opening. Hidden behind the dull, grey exterior of the complex are glitzy crystal chandeliers, upscale branded goods stores, a spectacular retractable roof and escalators with a twist.

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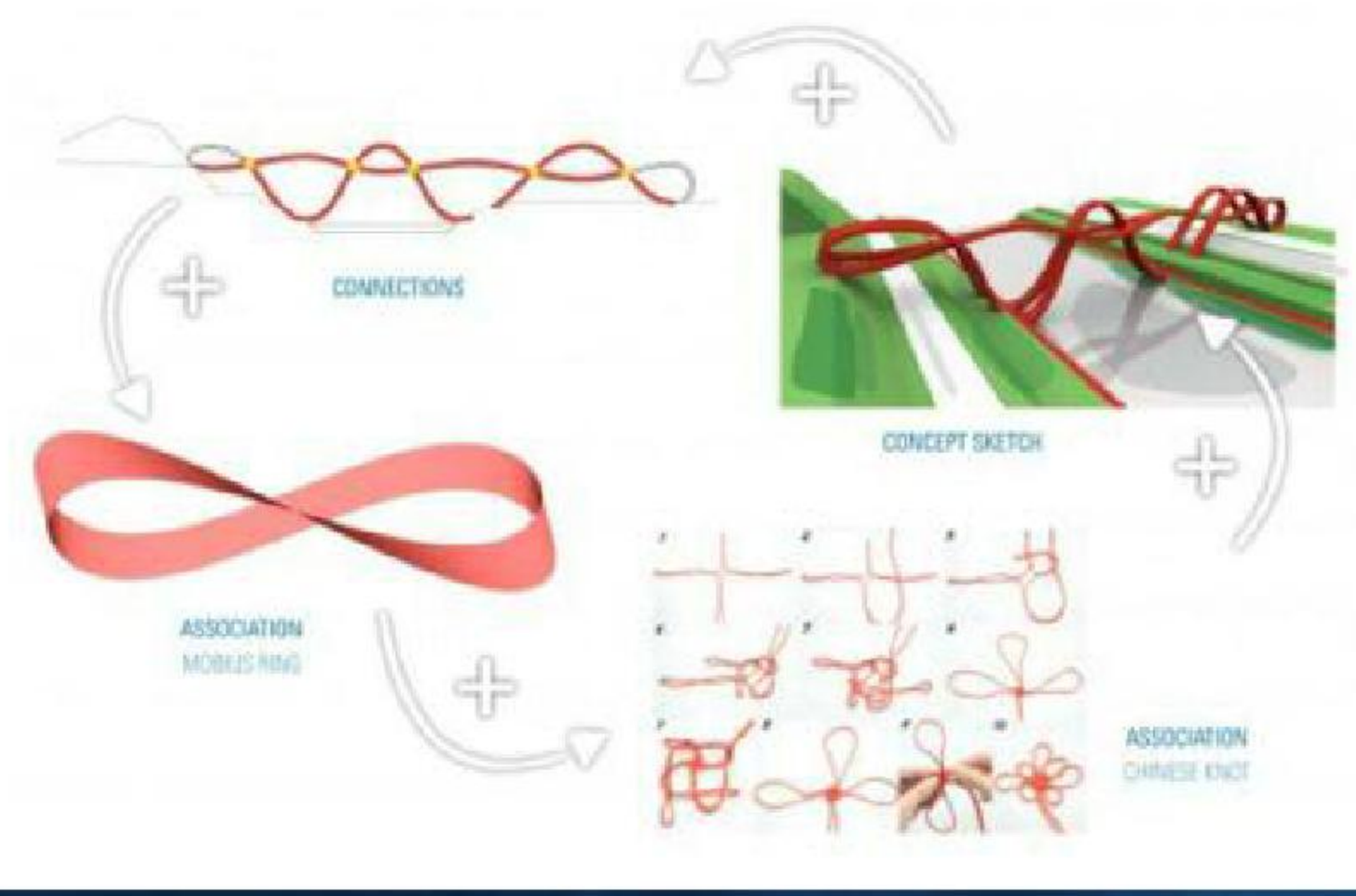
CHANGSHA BRIDGE

The bridge designed by NEXT Netherlands is more than just a connection. It is the key project for the development of the public space of the river park in the Meixi Lake District besides Changsha capital of Hunan province in China. It will be the icon on the recreational and touristic light street along the Dragon King Harbor River.

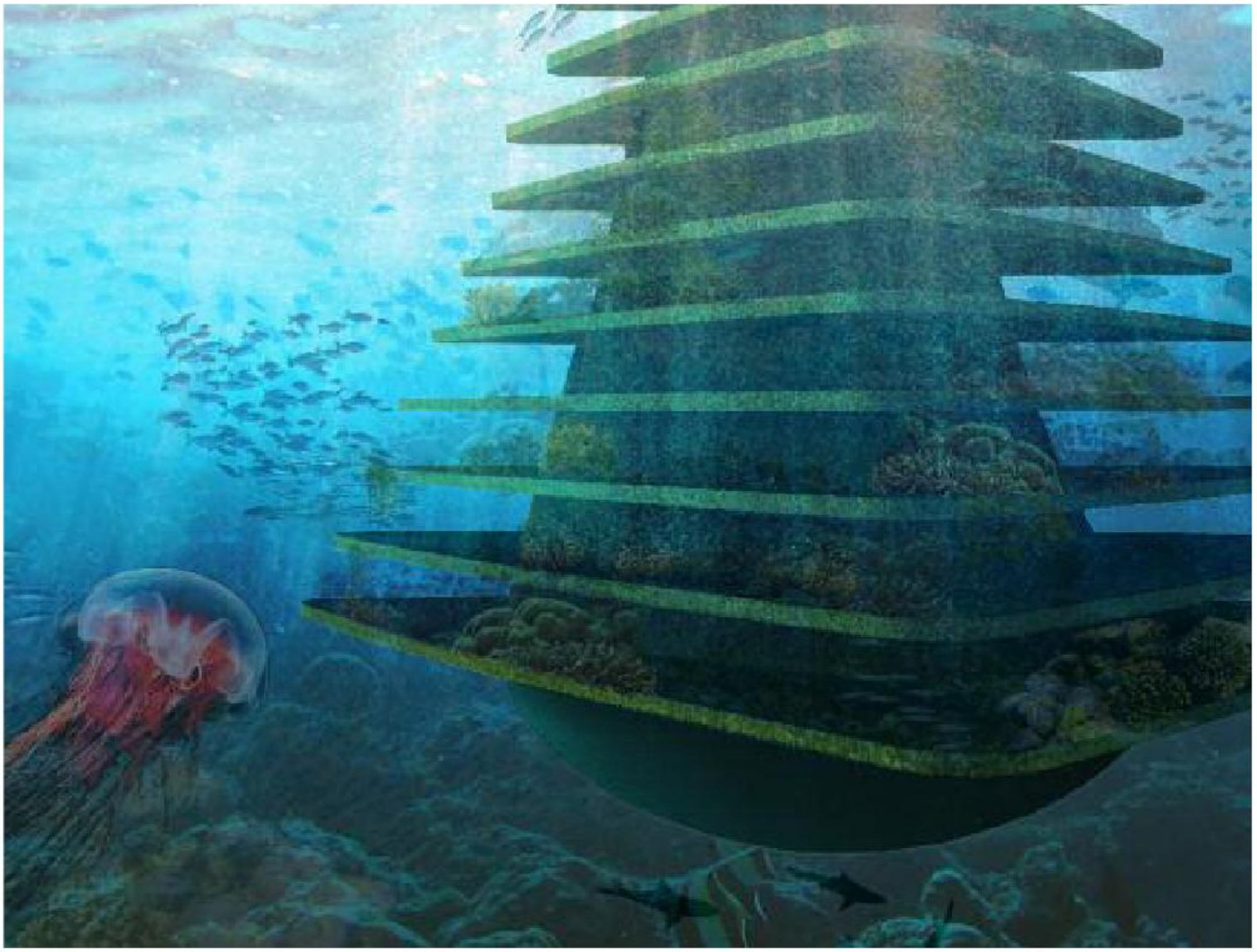
The construction with the intersecting connections is based on the principal of the Möbius ring. On the other hand it refers to a Chinese knot that comes from an ancient decorative Chinese folk art.

With a total length of 185 meters and 22 meters high, the bridge connects a diversity of routings on different heights. The iconic appearance contributes to the developing identity of the area and with its lighting contributes to the whole light routing along the river. It provides both a view on the Dragon King Harbor River as well as Meixi Lake, Changsha and it surrounding mountains.


CONNECTIONS
CONCEPT SKETCH
ASSOCIATION
MÖBIUS RING
ASSOCIATION
CHINESE KNOT

CAPTURE THE IMAGINATION

Known for innovative architectural design, Louis Vuitton's Marina Bay shop in Singapore doesn't disappoint. Designed by Moshie Safdie of Safdie Architects, the flagship store for South-East Asia is housed in one of the Crystal Pavilions, steel-framed, asymmetric buildings with angled facades designed to capture the imagination in their irregular construction. Virtually on the equator, and thus facing the issue of sun streaming in on all sides, the designer included continuous, linear bands of solar shading and UV protection for the shop's interior. The final effect of the shading is reminiscent of the masts and sails of a boat, providing further atmosphere in its harbour-side location.



SEA TREE

Urbanisation and climate change put a lot of pressure on available space for nature in city centers. New initiatives for adding extra park zones to a city are rare. Yet these kind of additional habitats for birds, bees, bats and other small animals could bring a lot of positive green effects to the environment of a city.

Waterstudio has designed a new concept for high density green spots in a city, the sea tree. This sea tree is a floating structure that hold in many layers, green habitats for animals. This structure is not accessible by man. The sea tree is built by offshore technology quite similar to the oil storage towers which can be found on open seas. The idea is that large oil companies donate a sea tree to a city showing their concern for a better city environment by using their own intellectual property. Space for this sea trees can be found on rivers, seas, lakes and even harbours. The height and depth of this sea tree can be adjusted depending on the location. The sea tree moves a bit along with the wind and is moored to the sea bed with a cable system. Under water the sea tree provides a habitat for small water creatures or even when the climate allows it for artificial coral reefs. The beauty of the design is that it provides a solution and at the same time does not require expensive space on land while the inclusion of the species living in the sea tree will effect a zone of several miles around the moored location.

This floating tower will be the first floating object 100% built and designed for flora and fauna.

WEBB BRIDGE MELBOURNE

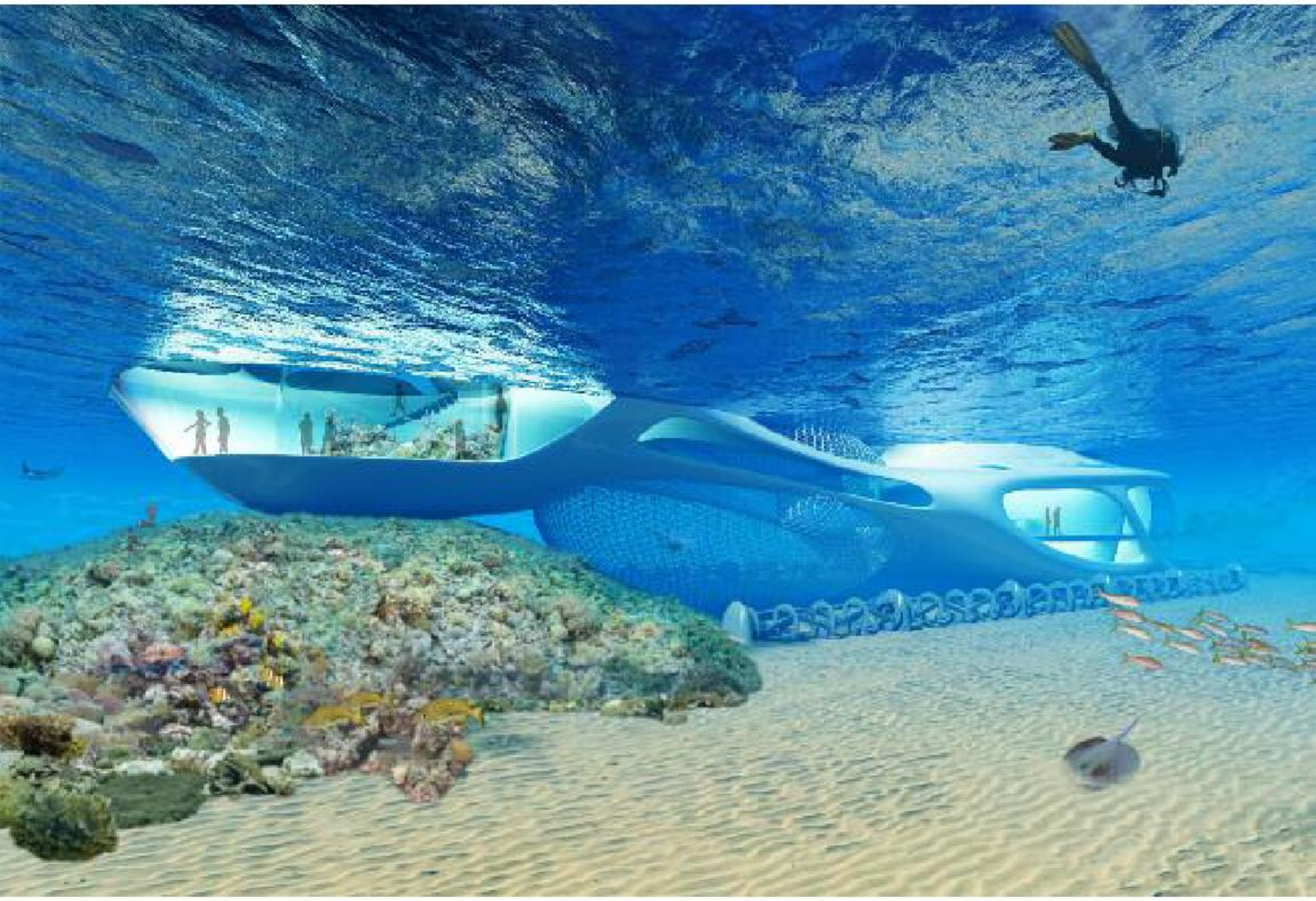
The Webb bridge is located on the southern end of the Docklands in Melbourne Australia. The bridge was designed with Aboriginal fishing baskets, fishing traps and drums in mind, along with the winding flow of the Yarra River itself. The bridge was designed by Robert Owen, distinguished Melbourne artist and Architects Denton Corker Marshall.

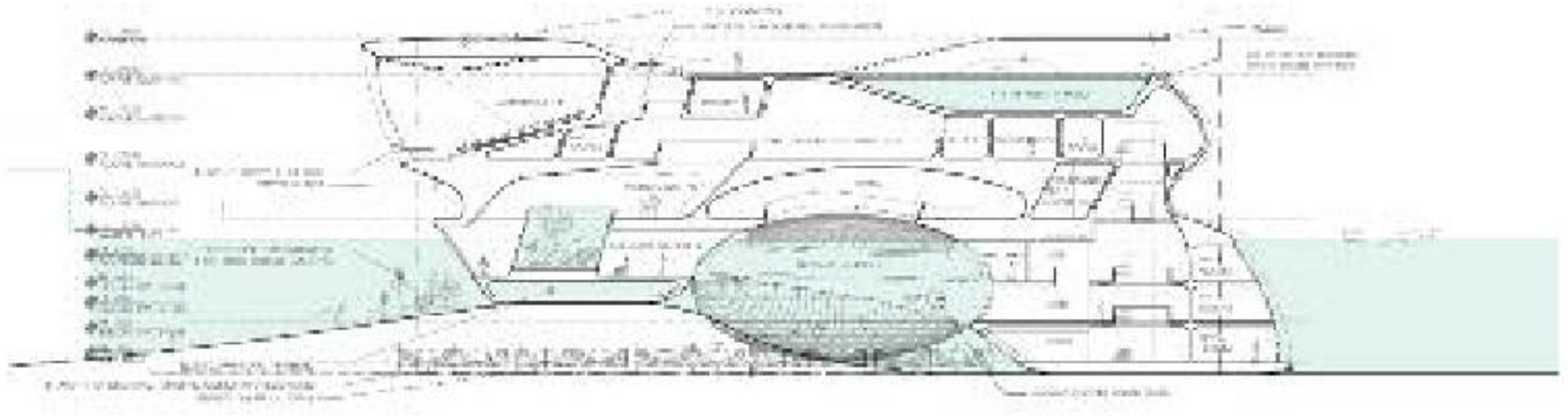
MARINE RESEARCH

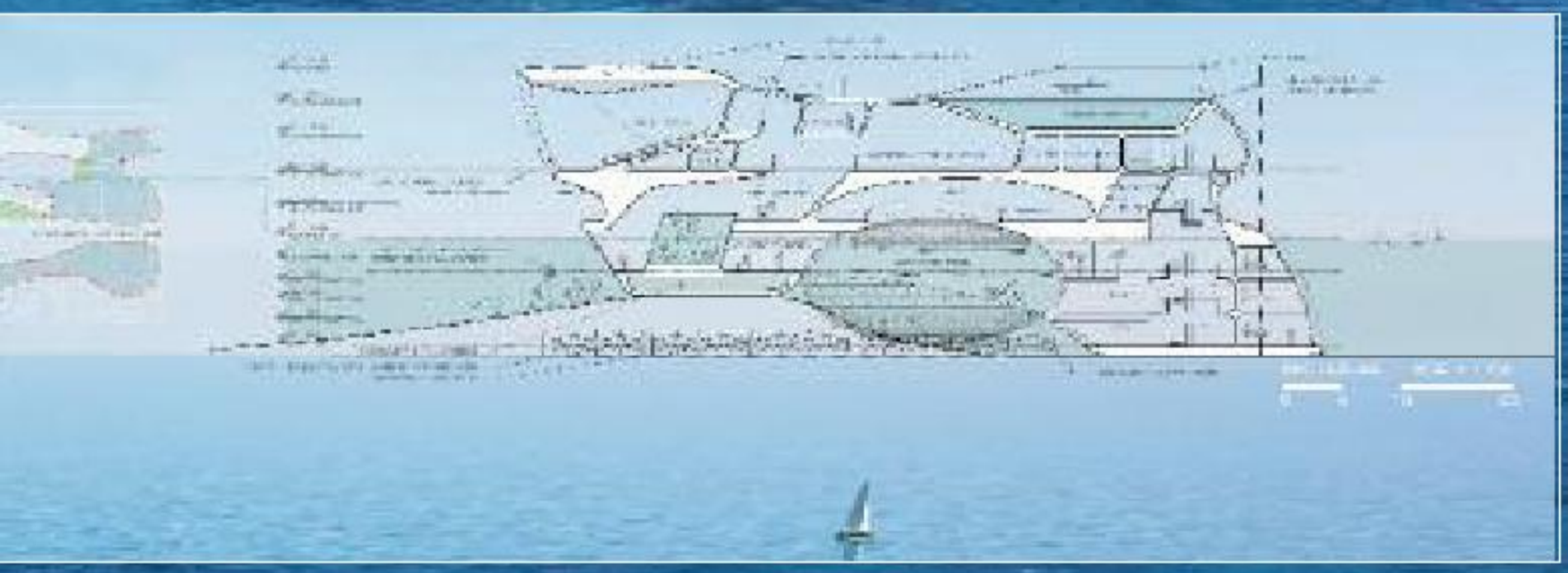
INDONESIA

A 2,500-square-meter Marine Research Center, 100 meters off the shore of Kuta Beach, Bali, Indonesia. The center is composed of three main components: public, semipublic and private. The spaces vary from underwater labs, scientist bedrooms and an aquatic garden to a sea water pool, swimming pool terrace, bar, and auditorium. The spaces are located above and below water to allow visitors and scientists to take full advantage of the amazing landscape that surrounds the project. This project represents a new typology for stationary in-water projects reached by boat, which in the past have been mostly relegated as merely work/non-destination platforms that do not take into account the design possibilities that the in-water sites present.

Three major events generate tsunamis: meteors, landslides, and large earthquakes. Underwater earthquakes—the most common type in Indonesia—with epicenters close to coast lines, form the conceptual basis of the architectural proposal. The design uses the initial elliptical pattern and cross section diagram of the tsunami wave, one focus of the center's research and prevention efforts, as the morphology generators and guides of programmatic organization. The design is both aesthetically imposing and seamlessly integrated into its aquatic natural environment. The result is a fluid structure with an immediate and direct visual connection to the exterior. The center will serve not only as an architectural icon for Bali but also as an international model for modern sustainable design with its use of on-site renewable energy resources through its integration of such technologies as tidal wave energy generation, natural ventilation, rain water collection, passive solar energy, low-E glass, and high reflectance fiber glass materials.








望京SOHO

WANGJING SOHO

Wangjing SOHO is a complex of three curvilinear asymmetric skyscrapers in Wangjing, a suburb of Beijing, China between central Beijing and Beijing Capital International Airport. According to Zaha Hadid, the project's architect, it is a "welcome and farewell to Beijing". The towers contain both office and retail space. Originally the SOHO was designed as a two-tower complex but due to height concerns it was redesigned as a three-tower project featuring towers of lower maximum height.The complex officially opened on 20 September 2014.

THE MAIN STRUCTURE OF MAD'S DESIGN OF THE HARBIN CULTURAL CENTER TAKES SHAPE

Harbin Cultural Island is located in the natural landscape of the riverside wetland north of Songhua River. The entire project covers an area of 1.8 square kilometers, with a construction area of 79,000 square meters. It is part of the development north of Sun Island, which is an important natural habitat in the north. In February 2010, MAD won the competition to design the cultural center on the island. The entire building was completed in 2014 when the Harbin July summer concert was held.

Influenced by both Chinese and Russian culture, Harbin is reputed as the music capital of the north. Different from other theater buildings that are normally located in the urban center, Harbin Grand Theater will not act as an isolated landmark for the city, but the natural continuation of the human spirit. Apart from regional protection and utilization of the wetland ecosystem, Harbin Theater, Harbin Labor Recreation Center, Harbin Great Square and the Wetland Park together compose the Harbin Cultural Island, to join culture, art and nature in an integrated environment.

Surrounded by rivers, the Cultural Island embraces the wide riverbank as its background appearing as a glacier stretching and connecting to each other into a cohesive whole. The main entrance mimics a jade belt bridge spanning the wetlands and connecting the city and the cultural center together. The movement of the terrain strategically directs the flow of people from different directions to the entrance of Harbin Theater and Harbin Labor Recreation Center. The external ramp of the Grand Theater, resembling a mountain path formed by gusting winds, guides people from the

interior to the exterior. Walking along the landscape passage, visitors are able to appreciate the surrounding cultural and natural landscape. Atop the highest point of these buildings, visitors are able to enjoy a panoramic view of the surrounding scenery as if they are on top of a mountain.

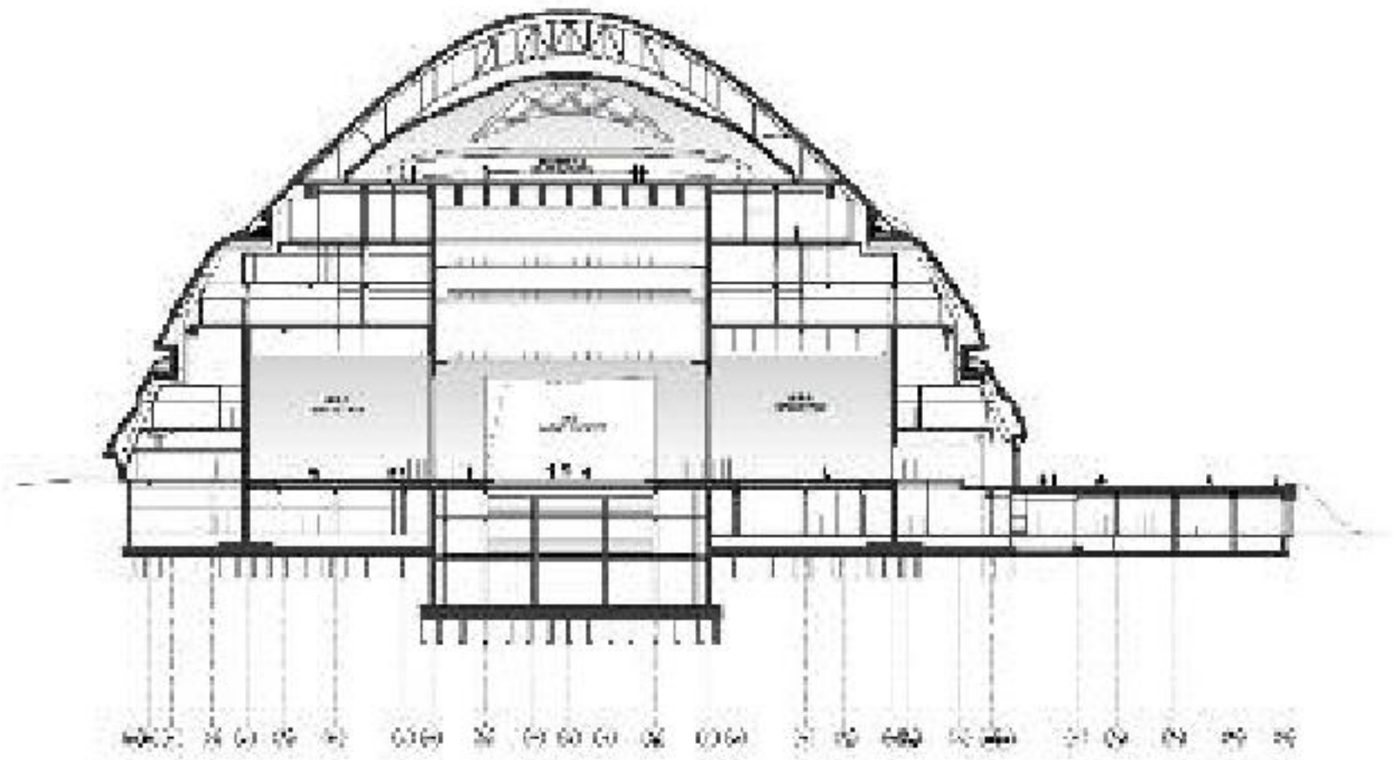
The grand theatre takes the natural beauty of the north as its premise. In an attempt to reduce such a large volume, the architectural form is a continuation of the natural environment as it becomes part of the landscape. The entire building acts as an undulating snow covered mountain, following a natural rhythm.

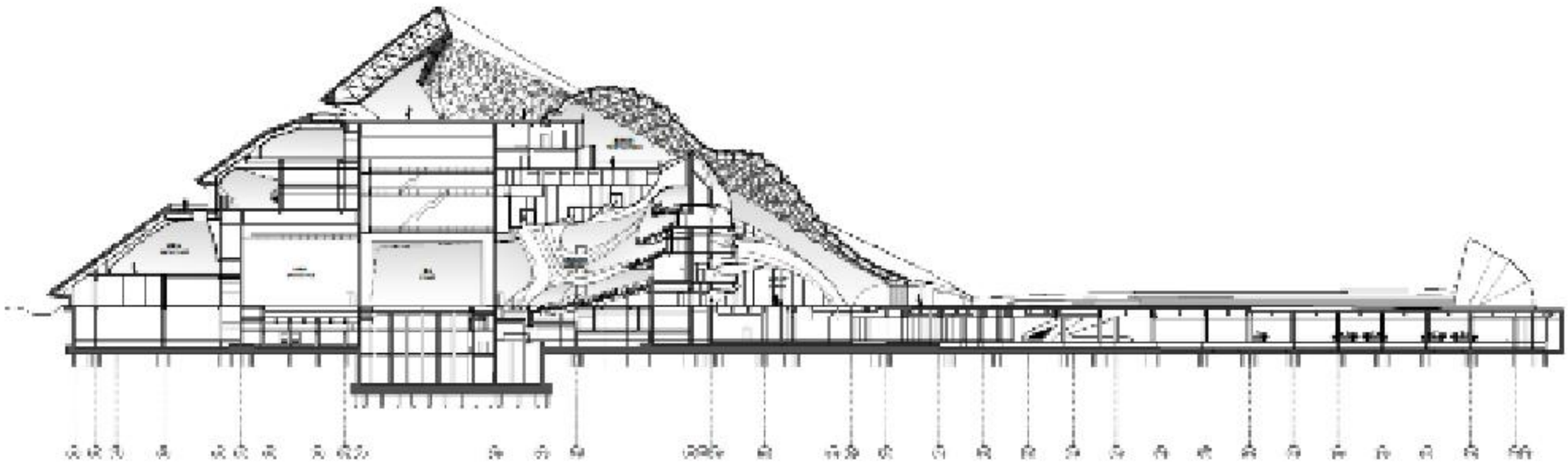
The cladding of the building is custom-made pure white aluminum. White stone and concrete are also used as part of the wall, introducing a pure feeling as ice and snow. The skylight above of the auditorium utilizes natural daylight. During the day, the need for interior lighting can be completely satisfied with energy-saving and special lighting effects. The Grand Theater is made up of two different sized theaters. The larger theater can accommodate up to 1,600 guests and it is formed with lower level stalls and a two-floor gallery. The interior space uses a large amount of wood to provide the best possible acoustical effects for the Performance Hall of the Grand Theater. Also, the wood and the white wall form a balanced contrast between warm and cold colours, resembling the unique warm atmosphere of mountain huts. The stage design for the theater is not only suitable for western opera and modern drama performances, but also meets the requirement of traditional Chinese theater plays. The acoustics and lighting design provide a high level of performance for the various venues in the theater. Covered by curved acrylic lamps, the second floor VIP lounge appears as a glowing clear crystal floating in the theater. The standardized stage is equipped with a versatile orchestral pit, designed to meet large-scale performances of Opera, Ballet and other various needs. The 400 seat small theater that connects with the larger theater serves as the venue for small drama performances, chamber music, and operas. The design of the

backstage curtain allows the stage to expand like a wide screen with natural landscape in the background integrating the indoor and outdoor view. The outdoor water section can also be used as an outdoor auditorium, therefore when the curtain opens; it becomes a panoramic arena with unobstructed views. This ingenious design creates a great space and a delicate dramatic effect for the Grand Theater to adapt to the innovation and changes of the modern theater art.

The art center demonstrates the rich scale of the city, the nature and the people. It encourages the publicity and mass participation of Harbin's art and culture activities. People can get a different sensory experience from different distances. The huge man-made lake between the Grand Theater and the Culture and Art Center contrasts the building with a long landscape bridge wedged in-between to form a Buddhist concept of "Void". Along the landscape bridge, visitors can reach the Labor Recreation Center west of the Great Square. With a construction area of 41,000 square meters, this building is a comprehensive building complementing the Grand Theater. Its functions include staff training, conferences, cultural education, exhibitions, hotel and catering space. These facilities will provide a diversified space for visitors, spectators and the staff. The boundary of the Cultural Center interconnects with the river bank and wetland, blurring the boundaries of the natural and the artificial. Open spaces like ramps, bridges, sky terrace and squares bridge the distance between man and nature.

From the design's initial startup in 2010 to August 2013, the overall structure of the Cultural Center was completed and the entire project began to take shape. In the coming year, the building façade, the interior design and landscape design will be finished. This new cultural island in Harbin is emerging to facilitate the blend of humanity, art and nature in the north and it will become the center of this city's spirit.



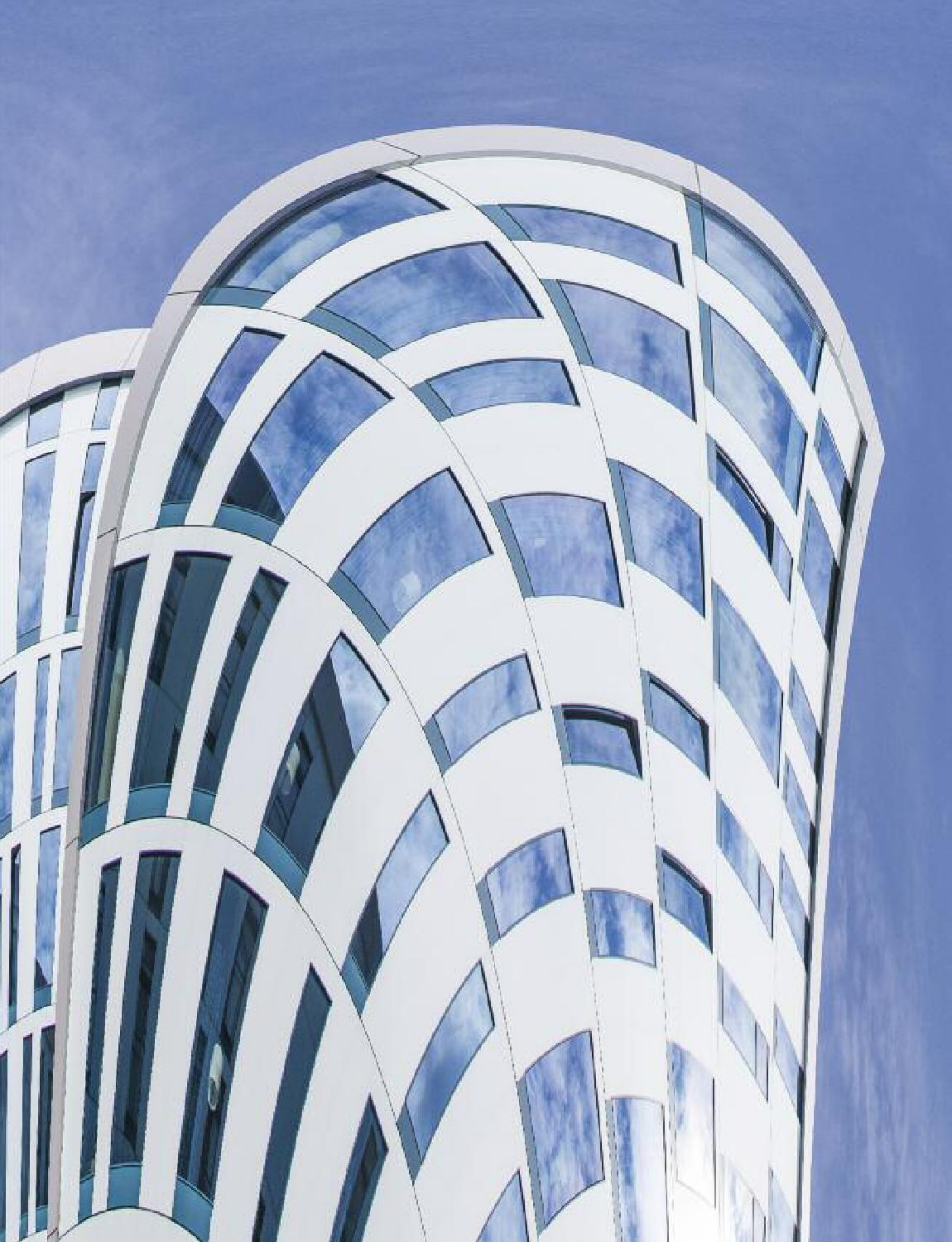


STRENGTH AND POWER

Magnificent in its presence, the EYE Film Institute Netherlands challenges the skyline in Amsterdam's Overhoeks neighbourhood. Housing a collection of 20,000 books, 70,000 photographs, 60,000 posters and 37,000 film titles, along with a museum of cinematography, the building was designed by Delugan Meissl Architects. Deliberately styled to appear to be in motion, the specialist-designed building dominates almost sparse immediate surroundings, lending a sense of strength and power to its symmetry.

STUNNING DESIGN

Man's ancient obsession with the beauty and potential of glass punctuates the future architecture skyline. Strong, curved lines abound in both outer and inner spaces, lending an almost cartoon-esque air to a stunning design.



URBAN FOREST

Urban forest is a high rise tower for the youngest urban center of China, Chongqing. Through the design MAD proposes a shift in the understanding of sustainability. It is a tower that reincorporates nature into a high-density urban environment and evokes affection for nature now lost in modern global cities.

In 1997, Chongqing was classified as the fourth urban municipality in China, an inconceivably vast metropolitan district larger than Beijing, Shanghai and Tianjin combined. Urbanization at the macro scale is intended to drive economic prosperity, but it must also engender a cultural identity for this newly-announced megacity in the hinterlands.

In the process of Western urbanization, skyscrapers were the symbol of technological mastery, abundant capital, and a stratified society. The green architecture movement has been largely technological as well, and ignored an intuitive longing to reengage with nature. The Urban Forest draws inspiration from the appreciation of nature and the artificial in oriental philosophy and reconnects urbanity to the natural realm.

The shape of the tower mimics vertiginous hillsides, shifting in a dynamic yet holistic rhythm. Unlike its predecessors, the Urban Forest is a tower with no emphasis on machined vertical force. It concentrates on the multidimensional relationships within complex spaces; multistory sky gardens, floating patios and serene gathering spaces. Architectural form dissolves into the ephemeral movement of air, wind and light.


GINZO

‘Urban Forest’ represents the most challenging aspirations of contemporary Chinese architecture – an urban landmark that expresses a devotion to nature, a living organ that breathes new life into the steel and concrete city.

TREE OF LIFE EXPO 2015

Located at the northernmost point of the Cardo, is the Lake Arena. This pond, which is approximately 90 meters wide, is encircled by a seating area, bordered by around 100 trees, placed in three concentric circles, and accommodates approximately 3,000 people.

The bottom of the pond is filled with dark pebbles to create a mirror effect. At the center of the pond there are fountains and the Tree of Life, which is where artistic water-play shows take place, complemented by sounds and lights, as well as concerts and artistic performances on floating platforms, and temporary events. Here, visitors can attend breath-taking sound-and-light shows, with fire-works and other special effects, as well as music. The daytime show lasting just under 3.5 minutes, features the work of five contemporary Italian composers, while the 12.5 minute evening event is complemented by the “Tree of Life Suite”, which has been composed specially for the occasion by Maestro Roberto Cacciapaglia.

FLOATING CRUISE SHIP TERMINAL

This revolutionary concept for a cruise ship-terminal consists of a floating construction in a triangular shape measuring 700 by 700 meters - enough to simultaneously host three of the world's largest cruise ships. The floating terminal is situated outside the mainland shore to allow enough drought for even the largest cruise-ships to moor. It's simple iconic shape is like an elegant and natural sculpture outside the shore. The basic triangular ring is lifted up at one point creating a smaller inner harbor with a spectacular entrance arch. The lifted point acts as a landmark – a beacon marking the terminal. The inner harbor allows smaller vessels to moor in enclosed water. From here water-taxis and ferries connect the cruise ship-terminal to the mainland. The terminal consists of three floating legs to which the lightweight construction of the raised point is attached as a cantilever. The shape, length and surface of the main floating structure ensure complete stability, even with the expected wave height and wavelength of (semi) open water. The whole structure is rigged to a foundation in the seabed by means of anchoring cables with dampers, allowing flexibility in vertical sense while ensuring stability in the horizontal plane. The exterior surface is cladded with aluminum panels. Both the fluid shapes of the structure as well as its construction are reminiscent of ship-exteriors. Ten percent of the considerable roof surface is covered with PV-cells, a sustainable energy source decreasing the demand of external energy. At nighttime the cruise ship terminal is lit in a subtle blue light, so as to bring out the bluish tint of the aluminum surface. The outside of the sculptural shape is accessible to pedestrians offering a surprising landscape

WATERSTUDIO.NL

amidst the open waters – a sparkling island of sculptural quality. A number of functions are situated to facilitate and enhance the traveling and recreational experience. Around the inner harbor, the central circulation area leads around modern retail space. The entire circulation area features a circular people mover that allows one to easily reach all areas of the terminal. Three large foyers provide entrance to the inner harbor from which ferries leave for the mainland. There is over 50.000 square meters of retail space, directly accessible from the central circulation area, creating an open and light ambience for shopping. The corners of the triangular shape house three larger function areas. The 180 room hotel features rooms at both the waterside as well as rooms at the inner courtyard and harbor. The inner rooms are situated alongside wide patios. The transparent patio roofs allow light from above to reach the hotel area and guest rooms. The conference center measures a total of over 24.000 square meters, offering around 30 meeting, conference and lecture halls of various sizes. From small personal meeting rooms to a 950 seat auditorium. The 12.000 square meter restaurant is situated in the raised point, looking out over the open water as well as the cruise terminal itself and the inner harbor, providing a spectacular dining experience. In total the cruise ship terminal features over 160.000 square meters of conference, cinema, retail, spa, hotel and restaurant etc. The floating cruise ship terminal is a complete world in itself – the ideal starting place of any luxury cruise travel.

CITADEL

The Dutch and water have always been in a love & hate relationship. Fighting the water in the country but also using the sea's infrastructure for international trade. In Holland in the city of Westland, Waterstudio is designing a project that is contributing on a new relationship with the water. Not one of living next to the water but living on water. The Citadel is Europe's first floating apartment building. Citadel means fortress for protecting a town. It's walls are designed to be the last line of defense when "the enemy" breach the other components of the fortification system.

Holland has as many as 3500 polders which are below sea level and kept dry by pumping water out 24/7. The citadel is part of an urban development with 1200 houses that will be built in a depolderised zone, called the New Water . The new water is a polder that will be deliberately filled with water after a few centuries artificially dry period. The depolderising done to protect other surrounding polders for flood during times of heavy rainfall. The only way to make such a project financially feasible is to buy out the existing houses and build and sell new houses adapted to water fluctuations.

The toolbox of floating developments in Holland is still not so large, floating houses, villas are normal, but concepts with high density are not available. The Citadel consists of 60 units which makes it the first floating development with more than 30 housing units/acre water. This relatively high density leaves more open water surrounding the building. The floating building is a composition of 180 modular elements around a courtyard on top of a floating concrete caisson foundation. All the apartments have a waterview and most of them have a berthing place for a small boat. The Citadel will be projected in the middle of the water with a floating road for connection with the shore.

The comfort level for this development is the same as in a high rise building. You will not feel any movement. This is because of the dimensions. The building is made of lightweight construction but special care has been given to the lowest possible noise level. The same standards as used for normal land base dwellings.

The floating foundation is a large and heavy concrete caisson that will house the Citadels car park. Common technology but custom engineered for the dimensions of approximately 240 x 420 feet and 9 feet high with 1 foot thick walls. Construction of the building will be done in a temporary dry dock on location. The actual depth of the water after depolderizing would be 6 feet while 12 feet of depth is needed. For that the construction site will be dug out which will create space for the 9 feet of depth of the floating construction. When the building is completed the pumps will stop and the site will flood. While being flooded the building will start to float.

Sustainability is a focus point for the principal of the development. The Citadel has the possibility to be a benchmark for floating urban development. The apartment building is surrounded by greenhouses, the interaction between the energy management of the greenhouses and the project is under investigation. Also water cooling by the exchange of heat by pumping water through the building floors is an option. The facade of the building is from aluminim panels. Those cost a bit more energy to produce but they have a very long lifespan and less maintenance on this water location. The energy consumption over the total lifespan will be 25% less than a conventional building on land.

With more than 50 roof terraces this project is a challenge for green roof designers to come up with lightweight green roofs that add to the climate control of the building.

The citadel project is the first of 6 floating apartment buildings in the New Water project. When finished, this project will be a reference project for floating developments in waterfront cities worldwide. It is not the architecture but the sustainability, technology and density that opens new possibilities for developing beyond the waterfront

AMILLARAH,

Amillarah is the Maldivian word for Private Island.This unique project developed by Waterstudio.nl, exists of 43 floating private Islands in a archipelago configuration.The exclusive Villas all have a private beach, pool with bushes and trees. A private jetty is the mooring place for the yachts. At the end of each jetty, a small pavilion is situated. A boutique Hotel provides all the services to these Private Islands.

FLOATING PRIVATE ISLANDS

SENSORY BEAUTY

Singapore's ION Orchard Shopping Mall has won architectural awards, and once inside, there is little doubt as to why. Designed by Benoy & RSP Architects and Engineers, the mall is part of a larger complex built on a park that sat directly over the Orchard MRT's station. Filling a massive, 61,600m2 (663,000') footprint, its walls sport a multi-sensory media centre, combining business and contemporary art - thanks to emerging designers and artists. 218m above the ground floor, an observation deck provides panoramic city views, while on the 9th-floor, an enormous garden and a club will greet visitors. Over 100 screens providing sound and vision, as well as filtered, natural light and 90n metres of LED mood-walls.


Cartier
ION
ORCHARD
GIORGIO

Floating City Apps for wetslums

Comparable to adjusting your smart phone with apps according to your changing needs you can also adjust the functionality in a slum by adding functions with Floating City Apps.

City Apps are floating developments based on a standard sea-freight container. They can be added to a slum using the space on water. Because of their flexibility and size, they are suitable for installing and upgrading sanitation, housing and communication. Floating City Apps have the ability to influence the growth of new slums. This makes Floating City Apps a growth planning tool for municipalities.

To succeed in the goal to upgrade wetslums, a solid network of building support and trust is needed. The inventors work with the proven effectiveness of the network of IHE UNESCO which has hydraulic engineers all over the world. These local advisors open the road to lasting partnerships with local NGO's, Universities embassies and local politicians.

First, a slum is mapped and local problems are related to water potential in the slum. The Floating City App with the most impact or effect is selected. The Floating City App will be transported from The Netherlands to the slum. Locally the floating foundation will be built from collected used PET bottles supported by a steel frame. The City App is placed on the function a business model for payed use of the Floating City App is executed in order to get a ROI for the investors. In case of any change in situation the City App can be reused relocated or sent back to The Netherlands.


FLOATING
CITY
APPS

TITANIUM & GLASS

Known as the Giant Egg, Beijing's National Centre of Performing Arts is an ellipsoid dome made of titanium and glass, and it sits as picture of floating, futuristic calm in an artificial lake. The 46 metre high construction was designed by Paul Andreu, a French architect, and features a north-south glass curtain, which widens from bottom to top. Measuring 12,000m2, the dome is accessed through a hallway that travels underneath the lake, leaving visitors with a sense of isolation in a city renowned for its hectic pace and lack of space.

THE APARTMENT

C.F. Møller Architects' consistent idea has been to create a complex of residents to accommodate a diversity of people, ranging from students and families with children to pensioners – a complex which creates ideal conditions for community spirit and busy modern lifestyles, including a supermarket, café, restaurant, fitness centre and library facilities on site. Therefore the different projects also welcome visitors and provide attractive outdoor spaces, as part of the projects' social sustainability.

The complex will be sustainable, not only during the construction process and in the choice of materials, but also in terms of the residents' lifestyle. For example, the proposals include a bicycle and car pool operated by the housing association and apartments with kitchen interiors specially designed to make recycling easy.

The design of the façades is based on a continuous surrounding double-shell in the form of a winter-garden zone around the buildings, and adding extra flexible living space to the homes. The exposed timber structure acts as a thermal climate buffer zone as well as passively pre-heating the natural ventilation air intake. A reflective curtain inside the winter garden cavity can be used to reflect solar gain in the summer period, and alternatively reflect heat back inwards during the winter period.

COMPLEX OF THE FUTURE

The buildings are designed around a wooden structure with stabilising concrete cores and will act as new characteristic landmarks and meeting places in the city. Pillars and beams will be constructed using solid timber and inside the apartments all windows, ceilings and window frames will be made from wood, allowing the material to also be visible from the outside through the large windows. Wood is an environmentally friendly and durable material which creates a comfortable and healthy indoor climate and effectively absorbs more CO2 during the lifecycle of building components than is released, resulting in a positive CO2 footprint.

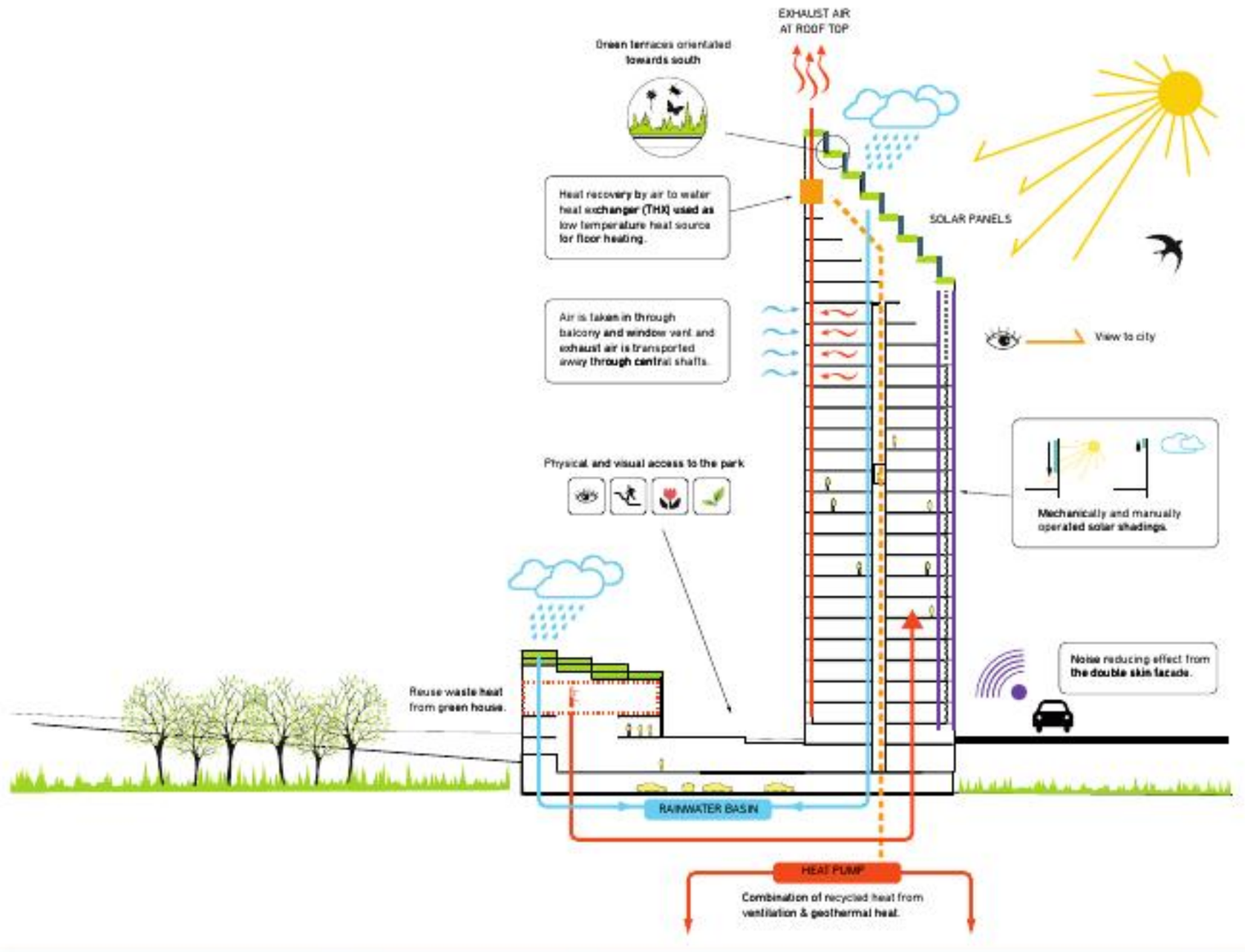
The double-shell facades are an innovation for residential construction that creates new values for the individual homes as well as the residential building complex and its relationship to the environment. The Double Skin Facade creates a surrounding conservatory and expands each apartment's usable area and its flexibility. The escape stairs are placed inside the double-skin façade, outside the buildings' heated floor area, thus saving space and resources.The staircases and double shell facades in that way become a social extension of the apartment.

WOODEN SKYSCRAPER

For the Västerbroplan plot in the Marieberg district, Berg, C.F. Møller has drawn up plans for a 34-floor wooden apartment building. The building is designed around a wooden structure with stabilising concrete cores.

Pillars and beams will be constructed using solid and cross-laminated timber and inside the apartments floors, ceilings and window frames will be made from wood, allowing the material to also be visible from the outside through the large windows. Wood is the natural choice when it comes to materials for innovative residential development: It is an environmentally friendly and durable material which creates a comfortable and healthy indoor climate and, surprisingly enough, also constitutes a very efficient protection against fire.

Each apartment will be equipped with an energy-efficient glass-fronted balcony and the building itself will receive energy from solar panels situated on the roof. At street level there will be a café and a nursery and, in a new neighbourhood building, all residents in the area will be able to enjoy a marketplace, gym and bicycle storage location. A shared winter garden will make allotments possible



PLAN TERRACED PENTHOUSE FLOORS

VIENNA UNIVERSITY

Interior of the new and futuristic Vienna University of Economics and Business. It is placed near Vienna Prater and designed by famous architect Zaha Hadid

All the visualization/rendering for the projects was designed by tangram 3DS

SNCI NYC TOWER

This iconic, 950-foot residential tower is proposed for a micro-urban site in New York City. The tower is a vertical neighborhood creating an efficient and valuable use for a small and otherwise underutilized water's edge site. Uniquely, the tower is designed by solus4 using their SNCI principles (Sustainable Neighborhood Collaborative Initiative). Applying these principles requires the full engagement of the design team, the building team, the financing team and the owners.

With a cross-section of G-plus-55, there are 50 full-floor, three-plus-bedroom apartments planned at approximately 3,000 square feet, each served by high-speed, destination-selective elevators. The distinctive shape of this tower comes from its innovative structure and energy-generating systems. The entire structural system, designed by LeMessurier Consultants, is in situ concrete with flat slabs supported by columns and shear walls embedded in the extruded core shaft leaving large portions of the perimeter free for the 14-foot floor-to-ceiling glass. The exterior glazing makes up one of the tallest proposed hybrid double-glazed skins. While the initial intent of the double skin is to enhance the thermal barrier, thereby controlling heat gain in the summer and heat loss in the winter, an interesting added benefit will be the chimney effect at the external surface. Strategically placed mini-turbines take advantage of the vertical air movement to generate supplementary power. Balconies at each floor provide exterior space for residents while adding a variable shading screen to further control glare and heat gain. Temperature-controlled window shading with personal preference overrides will provide for individual comfort requirements in any season.

The 950-foot blade mast is cantilevered off the concrete frame. Its entire outside surface, along with certain portions of the exterior glazing, is covered with transparent thin-film photovoltaic panels projected to provide the majority of the power requirement for the building, in tandem with other passive and active sustainable systems. Initial calculations show the building generating excess power at certain times of the year, which suggests a possible source of income for the residence owners. Keeping to the SNCI principles for energy savings strategies, the building will have no parking, except for a some all-electric cars in a variety of models (sedans, SUVs, mini-cars, etc.) that will be garaged on-site and owned and operated by the common ownership of the residences using a card access system.

The balconies, in addition to providing living space and shading, will act as rainwater collectors. The rainwater, rather than being shed to the street, will be harvested and added to the gray water recycling system. Along with fully integrated energy management systems, each apartment will have its own mini-plant for comfort control, domestic water, and recycling, thereby ensuring a stand-alone capability and reduced reliance on central systems. In addition to the entrance/exit to the all-electric car garage, the street level base of the tower will include a multi-level common social space, including neighborhood retail and food outlets, mini-produce market, terraced cafes, recreation, gym, swimming, museum/gallery space and office/studio space for residents.

Not only will this building provide residents with amazing views in an outstanding location convenient to all parts of the City, but will also place the owners of the residence in the forefront of low impact and sustainable communities.

BOSCO VERTICALE

Bosco Verticale (Vertical Forest) is a pair of residential towers in the Porta Nuova district of Milan, Italy, between Via Gaetano de Castillia and Via Federico Confalonieri near Milano Porta Garibaldi railway station. They have a height of 110 meters and 76 meters and will host more than 900 trees (approximately 550 and 350 trees in the first and second towers respectively) on 8,900 square metres (96,000 sq ft) of terraces.

The towers were designed by Stefano Boeri, Gianandrea Barreca and Giovanni La Varra. It also involved input from horticulturalists and botanists.

The building was inaugurated in October 2014

THE 3D HOUSE

The 3D Print Canal House is a three-year publically accessible 'Research & Design by Doing' project in which an international team of partners from various sectors works together on 3D printing a full-size canal house in Amsterdam. A beta-preneurial building project, which has the goal to revolutionize the building industry and offer new tailor-made housing solutions worldwide.

The research evolves around 6 'R&DO's' - 'Research & Doing'. The building site is designed as a growing exhibition and open to the public. The feedback from audiences generates input for research and market explorations: a live user test and feedback loop that intensifies and accelerates the research process on:

1. Parametric design
2. XL printing: development of the KamerMaker (self-developed portable XL FDM printer)
3. Development of new bio-based and sustainable and recyclable materials
4. New construction methods and techniques
5. Integration of smart technologies
6. Global customizable housing solutions

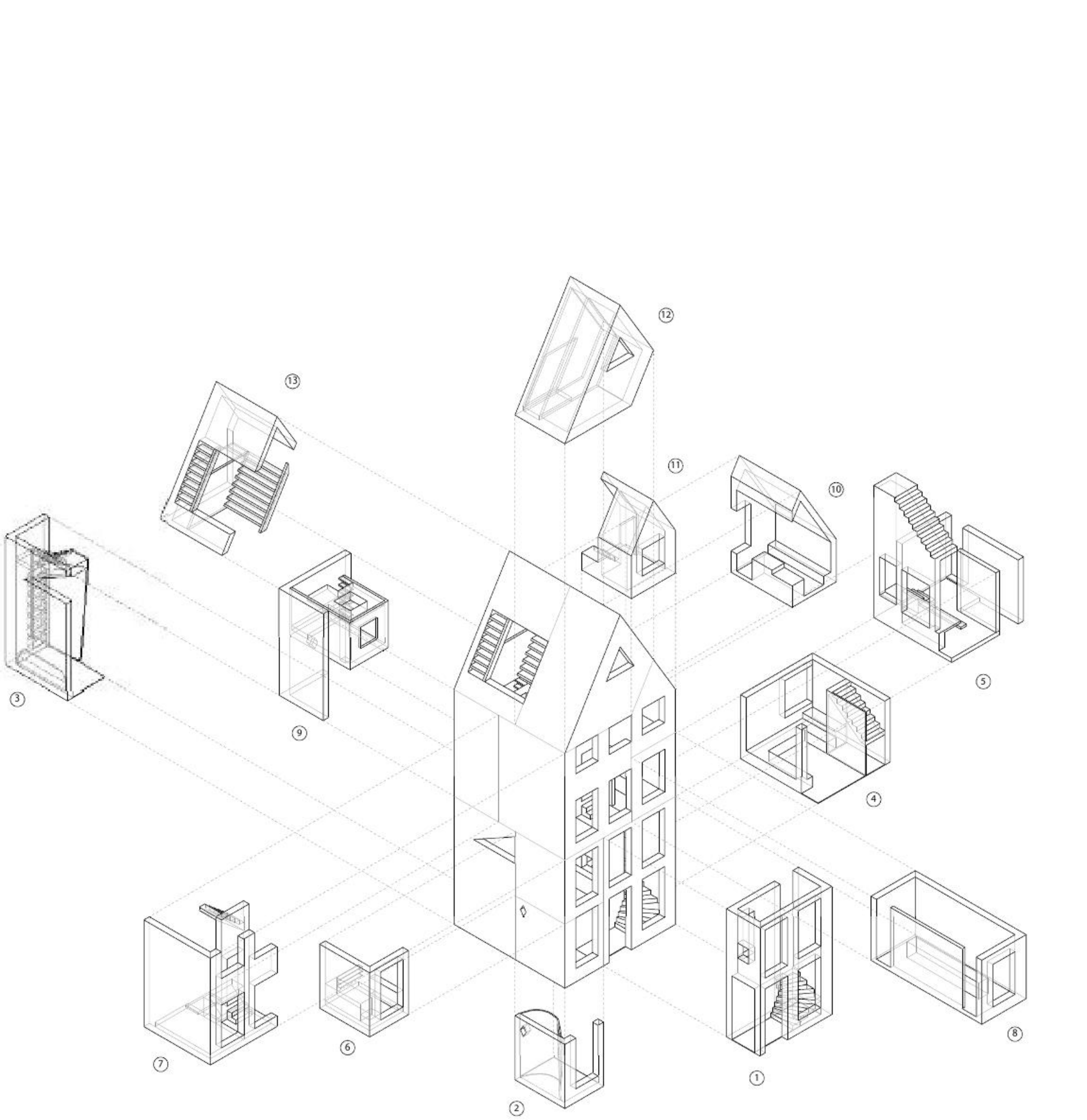
The house is made of 13 rooms that each consist of several printed elements. Each room showcases a research update in shape, structure and material. The rooms are first assembled and tested separately before finally being

constructed into the complete house. Thus, the expo site is experienced as ‘a growing village of rooms’. The project is initiated by DUS architects and shows that architecture can be catalyst for cross-sectoral innovation. It is collectively funded by all partners, who contribute to the project with knowledge and financial means.

Short project facts:

- Strong cross-disciplinary international partner network
- Direct link between innovation and corporate power
- Building site is laboratory for new start-ups with linked partners
- Open expo generates live audience feedback and growing global community
- Over 12.000 public visitors in the first year / 1000 visitors per month
- Ongoing worldwide media coverage (CNN, BBC, Al Jazeera, Time, New York Times etc.)
- Presented as ‘Future Amsterdam innovation project’ to Barack Obama and Dutch Prime Minister by the Mayor of Amsterdam.
- Winner SEA - International Sustainability Enterpreneurship Award 2014, Finalist Dutch Design Award 2014, Finalist New Material Award 2014.
- Tourist destination: building site located in the heart of Amsterdam.

DUS builds unique tailor made architecture with a global attitude, with a focus on community, design and technological innovation. The company was founded in 2004 by architects Hans Vermeulen, Hedwig Heinsman and Martine de Wit. DUS designs things that make you feel at home in the world – from your favorite coffee mug to the neighborhood that you live in. Recent projects include the re-designing of parts of the piers and gates of Amsterdam Airport Schiphol, a public park at the outskirts of Amsterdam and a 3D printed one-off bottle for Chanel. The office has won the prestigious Amsterdam Awards for the Arts 2011 and was nominated ‘best Dutch architecture practice’ in 2012. To DUS, architecture is a craftsmanship, and all their work has a personal touch. As is shown by their most recent project, the 3D Print Canal House, which was recently viewed by U.S. President Barack Obama and is currently under construction in Amsterdam. The project is a research into how new digital fabrication techniques can lead to new smart housing solutions and affordable tailor-made architecture worldwide.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